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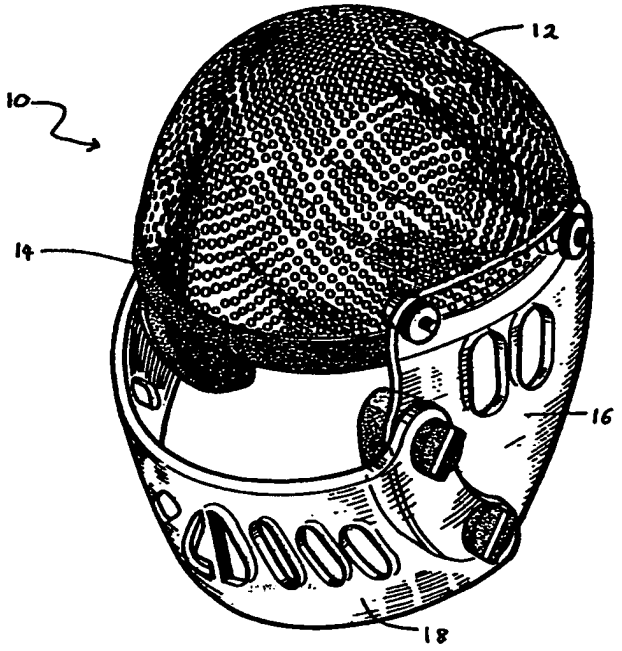
(54) Protective helmet

(57) Protective head gear 10, especially a cricketers helmet, comprises a metal shell 12 of domed configuration together with resilient internal means 14 adapted to mount the shell on the head of a wearer. The metal shell is conveniently formed by pressing from a planar blank of perforated mild steel.

Temple and face guards (16, 18) may be optionally added.



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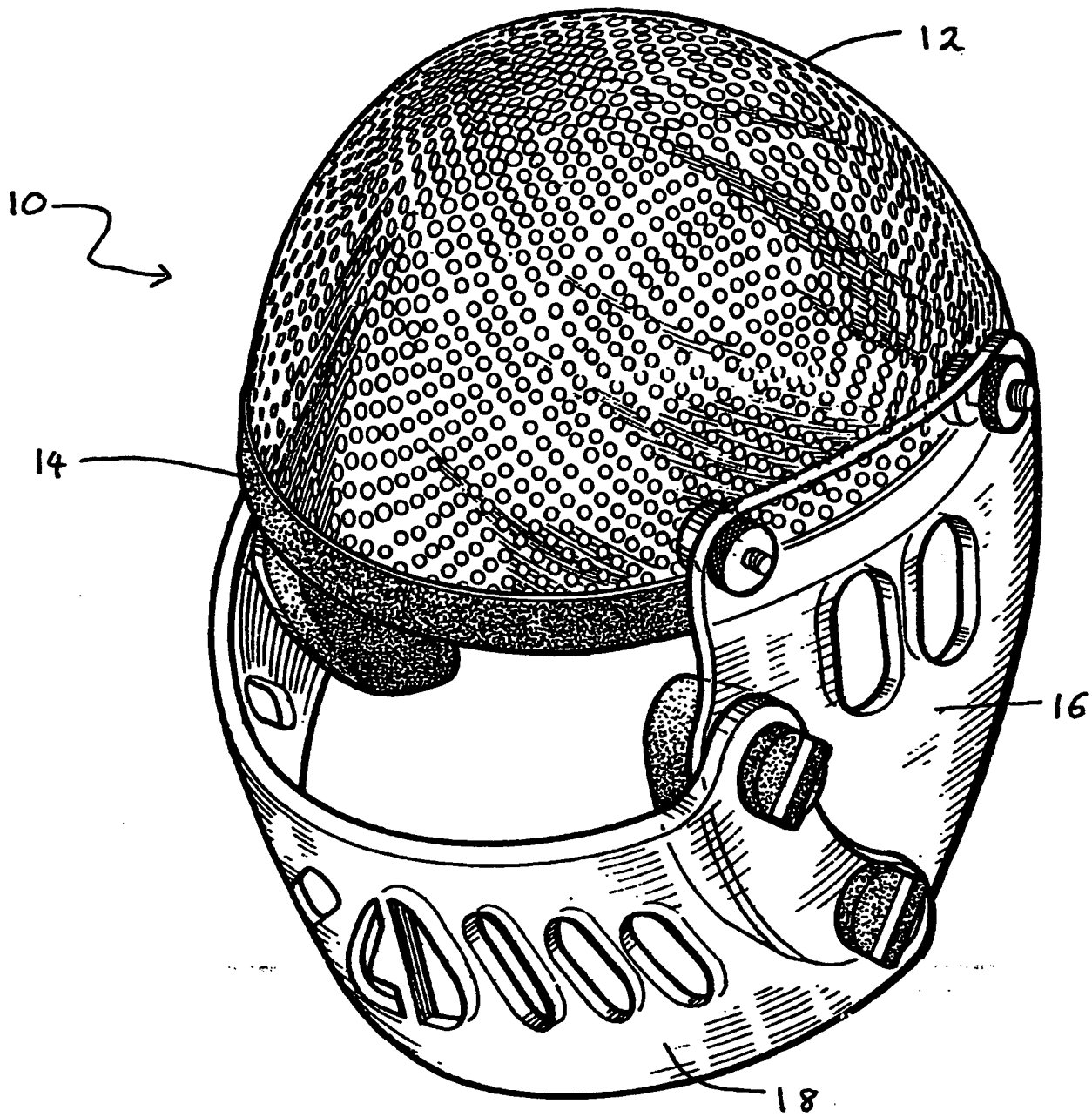

SPECIFICATION

Protective head gear

This invention relates to protective head gear particularly, but not exclusivley, of the type intended for use by sports participants.

Protective head gear in general can range from the heavy and uncomfortable steel type of helmet, as has been used for military purposes, to the lighter weight plastics type of helmet used for sporting activities. In general, protective head gear for sports purposes has comprised a plastics moulding with some internal cushioning to space the interior surface of the moulding from the head of the wearer.

In recent years, it has become quite common place for protective head gear to be adopted by participants in sports where hitherto no such protective head gear had been worn. For example, the 1960's saw the progressive intorduction of helmets into the game of ice hockey and, althouth still not universally adopted, it has become increasingly common place for batsmen in the game of cricket to wear protective helmets.

Considering in particular the type of helmet worn by cricketers, it should be appreciated that a batsman may be facing a relatively small hard ball delivered by a fast bowler at speeds of up to 90 m.p.h. A protective helmet for a batsman must therfore be capable of protecting the head of the wearer against impact by such a projectile whilst still permitting a good field of vision and, most importantly, comfort for the wearer. Cricket is played in conditions, especially in Asia, Australia and the West Indies, where the temperatures may consistently be of the order of 85-90 degrees fahrenheit or more and where the batsmen is required to wear a helmet continuously for a matter of hours at a time.

Helmets for cricketers have comprised a plastics moulding, suitably internally cushioned and with or without detachable optional temple and face guards, which are capable of withstanding the impacts of fast cricket balls. However, such moulded helmets have all suffered from the disadvantage that, apart from the effect of perhaps 3 or 4 small vent holes therein, they have been unable to permit the free passage of air over the head of the wearer. Clearly this is a substantial disadvantage especially in the types of conditions referred to above involving long continuous periods of wear in high temperatures.

It is an object of the present invention to provide an item of protective head gear which offers advantages over those previously propsed especially, but not exclusively, in the field of sports head gear.

In accordance with the invention there is provided protective head gear comprising a shell of generally domed configuration formed of a metal with a plurality of apertures therein and means adapted to mount the shell on the head of a wearer.

Conveniently the metal shell is formed of steel, preferably a mild steel, which is of uniform thickness and wherein the said apertures comprise perforations. Conveniently such a metal shell is formed to its domed configuration by pressing a planar blank of perforated steel to said configuration.

Preferably the whole surface area of the metal shell is provided with closely adjacent small apertures as may be provided by a perforated metal.

Other features of the invention will become apparent from the following description given herein solely by way of example with reference to the drawing which shows an isometric view of protective head gear in accordance with the invention.

As illustrated in the drawing, protective head gear 10 in accordance with the invention comprises a helmet particularly applicable for use by batsmen in the game of cricket. However, it should be appreciated that the protective head gear of the invention is not limited to such a cricketers helmet; the invention inits broadest aspect may encompass protective head gear suitable for most uses e.g. motor cycling, horse riding, American football or ice hockey.

However, in accordance with the invention, the protective head gear 10 comprises essentially a shell 12 of generally domed configuration formed of a metal with a plurality of apertures therein. In the specific example illustrated, such a metal shell 12 is formed of a mild steel having said apertures in the form of perforations and wherein the steel is uniform thickness. Such a metal shell may be produced to its domed configuration by pressing a planar blank of perforated steel to said configuration. The whole of the surface area of the shell 12 is provided with closely adjacent small diameter perforations as shown.

It will be appreciated that suitable means are provided adapted to mount the shell on the head of a wearer and may comprise a plurality of cylindrical resilient foam buffers (not illustrated) adjacent the crown of the shell together with a resilient foam head band 14. The head band 14 may be continuous around the periphery of the shell 12 but preferably comprises a plurality of individual resilient foam elements. The use of such foam buffers and head band elements permits one size of shell 12 to be adapted to different head sizes merely by variation of the thickness of the foams. It will be appreciated that such an arrangement enables greater economies to be practised in manufacture as a complete range of head sizes may perhaps be accommodated by as few as three shell pressing sizes.

Although described herein as being formed of perforated mild steel, the shell could conceivably be formed of alternative metals such as e.g. aluminium. Also, it is contemplated that an expanded metal may be utilised instead of a perforated metal.

Protective head gear constructed in accordance with the invention thus offers three primary advantages:—

1. The head gear is light in weight since the shell thereof is formed of an apertured metal whereby the weight of material is reduced compared with that of a shell of continuous metal.
2. The apertured metal of the shell, together with its domed configuration, offers inherent stiffness against impact.
3. Most importantly, when used as a cricketers helmet, the apertured metal shell permits a free flow of air over the head of the wearer.

It will be appreciated that, although shown in the

drawing, the provision of further protective elements such as temple and face guards 16 and 18 are optional. The metal shell 12 may be readily coloured by painting or dipping, or may be formed from a pre-coloured blank, for the purposes fo uniformity for team use.

CLAIMS

1. Protective head gear comprising a shell of generally domed configuration formed of a metal with a plurality of apertures therein and means adapted to mount the shell on the head of a wearer.

2. Protective head gear as claimed in claim 1 wherein the metal shell is formed of steel.

3. Protective head gear as claimed in either one of claims 1 or 2 wherein the metal shell is formed of perforated steel of uniform thickness.

4. Protective head gear as claimed in any one of the preceding claims wherein the metal shell is formed to its domed configuration by pressing a planar blank of perforated steel to said configuration.

5. Protective head gear comprising a shell of generally domed configuration constructed and arranged substantially as herein before described with reference to the drawing.

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